

REMARKS

Claims 1-12 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 6 and 11.

Claims 6 and 11 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant has amended claims 6 and 11 paying close attention to the Examiner's helpful remarks. Applicant wishes to thank the Examiner for the careful reading of the claims. It is Applicant's position that the claims as now presented are clear and satisfy the requirements of the statute.

Claims 1 and 5-7 have been rejected under 35 U.S.C. 102(b) as being anticipated by Hidaka et al. (WO 00/29214).

The present invention relates to a positive photosensitive composition comprising an alkali soluble organic high molecular substance, a photo-thermal conversion material, a resin and a dissolution inhibitor. The alkali soluble organic high molecular substance is in a range from 80 to 95 wt. % of the total solid amount of the components of the composition and the photo-thermal conversion material is in a range from 0.1 to 10 wt. % of the total solid amount of the components of the composition. The dissolution inhibitor is in a weight percentage range from 0.5 to 8 wt. % of the total solid amount of the components. This advantageously provides a composition that provides excellent adhesion characteristics when applied to an object in a room which has a humidity in the range of 25% to 60%.

Further, this composition provides excellent coating and adhesion characteristics such that it can be applied to aluminum and copper or copper sulfate plating, which requires greater adhesion than aluminum. The photosensitive composition advantageously has a small reduction in film thickness after development such that the generation of pinholes caused by the film reduction is greatly reduced, which ensures excellent development. The photosensitive composition advantageously provides excellent scratching resistance and also advantageously allows for a resist image to be obtained that has excellent printing durability. The prior art as a whole fails to teach or suggest such features or advantages.

Hidaka et al. discloses a positive photosensitive printing plate that is prepared wherein the photosensitivity is to near-infrared rays which do not induce a chemical change in a photosensitive component. The printing plate comprises a photosensitive material formed by coating a composition onto a support. The composition comprises both a photo-thermal conversion material having an adsorption band within a wavelength range of 600 nm to 1,300 nm and an alkali-soluble resin. The proportion of the photo-thermal conversion material in the positive photosensitive composition is, in a weight ratio, preferably at least 0.1 wt%, more preferably at least 1 wt%, particularly preferably at least 2 wt%, and preferably at most 50 wt%, more preferably at most 30 wt%, and particularly preferably at most 20 wt%. The alkali-soluble resin may be any resin that is soluble in an alkali developer, preferably one which contains at least a novolak resin or a polyvinyl phenol resin. The proportion of the alkali-soluble resin in the photosensitive composition is preferably at least 40%, more preferably at least 60%, and preferably at most 95%, more preferably at most

90%, in a weight ratio. The photosensitive material also comprises a solubility suppressing agent.

Hidaka et al. fails to teach and fails to suggest the combination of an alkali soluble organic high molecular substance, a photo-thermal conversion material, a resin and a dissolution inhibitor having the specific weight ratios as claimed. In fact, Hidaka et al. fails to teach any specific weight ratio for the solubility suppressing agent. At most, Hidaka et al. discloses a solubility suppressing agent, but fails to disclose a dissolution inhibitor having a weight ratio of 0.5 to 8 wt. % as claimed. The specific weight ratios of the claimed combination are significant. They advantageously provide for excellent adhesion characteristics when applied to an object in a room which has a humidity in the range of 25 to 60%. This also allows the composition to adhere to copper sulfate, which is a difficult material for another material to adhere to. Hidaka et al. fails to provide such adhesion advantages in a humid environment since Hidaka et al. does not disclose a dissolution inhibitor having the claimed weight ratio range. Hidaka et al. directs the person of ordinary skill in the art to a variety of ranges of the weight ratio for a photo-thermal conversion material and an alkali-soluble resin, but fails to direct the person of ordinary skill in the art towards the specific range of weight ratios of a photo-thermal conversion material, a dissolution inhibitor and an alkali soluble substance as claimed. As such, Hidaka et al. takes a different approach than the present invention and fails to provide any suggestion for the features of the present photosensitive composition. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 and all claims that depend thereon.

Claims 1 and 4 have been rejected under 35 U.S.C. 102(b) as being anticipated by Tsuruya (JP 2002-189294).

Tsuruya discloses a photomechanical process for a positive photosensitive planographic printing plate having a large development latitude. The photosensitive printing plate has a positive image forming material. Similar to Hidaka et al., the positive image forming material has a positive photosensitive composition layer. However, Tsuruya fails to teach or suggest a photosensitive composition comprising an alkali soluble organic high molecular substance, a photo-thermal conversion material, a resin and a dissolution inhibitor having the specific weight ratios as claimed. Tsuruya discloses a photosensitive composition layer containing a photothermal converting material and an alkali-soluble resin on the base containing a novolak resin and/or phenolic resin and an alkali-soluble resin component. However, Tsuruya merely discloses that the alkali-soluble resin component has an average molecular weight less than 2,000 and occupies 55 wt. % of the entire alkali-soluble resin. Tsuruya fails to teach or suggest an alkali soluble organic high molecular substance that is in a range from 80 to 95 wt. % of the total solid amount of components of the composition. Further, Tsuruya does not disclose a dissolution inhibitor and a photo-thermal conversion material having the specific weight ratios as claimed. These specific weight ratios advantageously provide a photosensitive composition that has excellent scratch resisting properties as well as excellent print durability. Tsuruya does not disclose such resistance advantages since Tsuruya does not provide any teachings for the combination of a dissolution inhibitor, a photo-thermal conversion material and an alkali-soluble substance

with the specific range of weight percentages as claimed. As such, the prior art fails to teach important aspects of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 and all claims that depend thereon.

Claims 1, 3 and 5-7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Parsons et al. (US 6,280,899) in view of Hidaka et al.

As previously discussed above, Hidaka et al. fails to provide any suggestion or teaching for the claimed combination. Further, Parsons et al. fails to teach and fails to suggest a photo-thermal conversion material, a dissolution inhibitor, a resin and an alkali-soluble substance, wherein the photo-thermal conversion material, the dissolution inhibitor and the alkali-soluble substance have the weight ratios as claimed. Parsons et al. discloses heat-sensitive compositions that are used in printing plate precursors. Parsons et al. teaches that the compositions contain an active polymer, such as phenolic resin, a compound that reduces the aqueous developer solubility of the polymer and an infrared absorber. However, Parsons et al. only discloses that the active polymer is present in an amount of at least 10%, preferably at least 25%, more preferably at least 50%, by total weight of the polymer substances present in the composition, but does not disclose an alkali-soluble substance having a weight ratio in a range from 80 to 95 wt. % of the total solid amount of the components of the composition. In fact, Parsons et al. directs the person of ordinary skill in the art away from the features of the claimed combination since Parsons et al. discloses that the active polymer and an additional polymeric substance makes up a major proportion of the composition, which is at least 50%, preferably at least 65%, most preferably 80%, of the

total weight of the composition. In contrast to the present invention, Parsons et al. fails to disclose that the active polymer alone accounts for 80% to 94% of the total weight of the composition. As such, the prior art as a whole teaches away from the features of the present invention. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that depend thereon.

Claims 2 and 10-12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hidaka et al., further in view of Susukida et al. (WO 00/29214). Although Susukida et al. discloses a positively photosensitive resin composition, the references as a whole fail to suggest the combination of features claimed. Specifically, Hidaka et al. fails to teach or suggest the combination of an alkali soluble organic high molecular substance, a photo-thermal conversion material, a resin and a dissolution inhibitor having the specific weight ratios as claimed. As such, the references together do not teach or suggest the combination of features claimed. One of ordinary skill in the art is presented with various concepts, but these concepts do not provide any direction as to combining the features claimed. All claims define over the prior art as a whole.

Claims 2 and 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Parsons et al. in view of Hidaka et al., and in further in view of Susukida et al. As previously discussed above Hidaka et al. provides no suggestion and no teaching for the specific combination of weight ratios as claimed. As such, the prior art references fail to suggest important aspects of the claimed combination. Accordingly, all claims define over the prior art as a whole.

Claims 2 and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuruya in view of Susukida et al. As previously discussed above, Tsuruya fails to suggest the combination of features claimed. Specifically, Tsuruya fails to teach or suggest the combination of an alkali soluble organic high molecular substance, a photo-thermal conversion material, a resin and a dissolution inhibitor having the specific weight ratios as claimed. One of ordinary skill in the art is presented with various concepts, but these concepts do not provide any direction as to combining the features claimed. All claims define over the prior art as a whole.

Favorable action on the merits is requested.

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